REMARKS

Claims 1-44 are presented for consideration. Claims 1, 15, 31, 41 and 42 are the independent claims.

Editorial changes have been made to selected claims based on the Examiner's suggestions in paragraph 3 of the Office Action. In addition, the independent claims have been amended to further distinguish Applicant's invention from the cited art.

The amendments to the claims were not presented earlier as it was believed that the previously presented claims would be found allowable. This Amendment does not add any additional claims. Moreover, the Examiner's familiarity with the subject matter of the present application will allow an appreciation of the significance of the amendments herein without undue expenditure of time and effort. Finally, the Amendment does not raise new issues requiring a significant amount of further consideration or search. Accordingly, it is submitted that entry of the Amendment is appropriate.

Applicant notes with appreciation that Claims 11, 12, 13, 25, 26, 27 and 39 are indicated as containing patentable subject matter. These claims remain in dependent form, however, as it is submitted that their respective independent claims are allowable in their own right for the reasons discussed below.

Initially, Claims 1-40, 32 and 44 were objected to because of informalities identified in paragraph 3 of the Office Action. As noted above, the claims have been amended to incorporate the Examiner's suggestions, with one exception. In that regard, in Claim 11, line 4, the "adder/summer" has not been amended, as it is respectfully submitted that this term best describes this feature of the claimed invention.

Claims 1, 2, 10, 15, 16, 24, 29 and 41-43 stand rejected under 35 U.S.C. §103 as allegedly being obvious over Citta '619 in view of Krasner '291. The remaining claims stand rejected as allegedly being obvious over this combination of art and further in view of Beauvais '775 (Claims 3-7 and 17-21), Knutson '369 (Claims 8, 9, 22, 23 and 30), Nishida '939 (Claims 14, 28 and 44), Broekhoven '842 (Claims 31, 32, 38 and 40), or Broekhoven and Beauvais (Claims 33-37). These rejections are respectfully traversed.

Applicant's invention as set forth in Claim 1 relates to a demodulator for demodulating digital data, and comprises a receiver circuit for receiving a transmitted digital data signal, a correlator to correlate the received digital data signal with a predefined reference training sequence to produce a correlation value, and a verification unit to select correlation values above a threshold value. In addition, a determining device determines if a fractional sample delay added to a demodulator's symbol sampling timing would improve synchronization timing and calculates a required fractional sample delay to improve synchronization, and an implementing device implements the calculated fractional sample delay if it is determined that the fractional sample delay would improve the demodulation synchronization timing. A demodulating device demodulates the digital data signal.

Claims 15 and 31 relate to a method for demodulating digital data and a computer executable code for implementing such a method, respectively, and correspond substantially to Claim 1. These claims thus also correlate a received digital data signal with a predefined reference training signal to produce a correlation value, and determine if a fractional sample delay added to a demodulator's symbol sampling timing would improve synchronization timing and calculate a required fractional sample delay to improve synchronization.

In Claim 41, a method for demodulating digital data includes the steps of receiving a digital data signal, correlating the received digital data signal with a predefined reference training sequence to produce a correlation value, and selecting correlation values above a threshold value. In addition, an amount of fractional sample delay to be added to a demodulator's symbol sampling timing is determined based on the selected correlation values, the fractional sample delay is implemented, and the digital data signal is demodulated.

Claim 42 is directed to a demodulator for demodulating digital data and corresponds substantially to Claim 41.

As discussed in the previous Amendment of November 12, 2004, the primary citation to Citta relates to a receiver synchronizer for use in a data communication system. A receiver 14 includes a demodulator 40, an A/D converter 42, filter 44, and a synchronizer 46 (see Figure 5). The synchronizer 46 includes a detector 60 which correlates a signal received by the receiver with reference up and down chirps having a waveform which substantially matches the waveform of pilot up and down chirps provided by a transmitter 12 (see Figure 7, column 5, line 19, *et. seq.* of Citta).

In contrast to Applicant's claimed invention, however, it is respectfully submitted that Citta does not teach or suggest, *inter alia*, correlating a received digital data signal with a reference training sequence to produce a correlation value, and calculating (or determining) a fractional sample delay. To even further distinguish Applicant's invention from this reference, the claims have been amended to include a predefined reference training sequence. The Office Action asserts, on page 2, that the pilot chirps contained in the received signal are correlated with reference chirps to synchronize the receiver (citing column 2, lines 21-31of Citta). It is respectfully submitted, however, that although Citta discloses correlating the

received signal with a "reference" up chirp and a "reference" down chirp, such reference up and down chirps are not analogous to Applicant's claimed predefined reference training sequence. As understood, the pilot up and down chirps are also used in the receiver 14 as reference up and down chirps, and any frequency displacement therebetween appears as a time shift from a center correlation. In this way, the pilot up and down chirps permit the synchronizer 46 to synchronize the receiver to the received signal (see column 4, line 54 through column 5, line 18).

Accordingly, it is respectfully submitted that Citta does not teach or suggest, among other features, producing a correlation value by correlating a transmitted digital data signal with a predefined reference training sequence as set forth in each of Applicant's independent claims.

The secondary citation to Krasner relates to a noise correlation system and was cited for detecting a correlation peak using a threshold.

Krasner fails, however, to compensate for the deficiencies in Citta as discussed above with respect to Applicant's independent claims. Therefore, without conceding the propriety of combining Citta and Krasner in the manner proposed in the Office Action, it is submitted that such a combination fails to teach or suggest Applicant's claimed invention. Accordingly, reconsideration and withdrawal of the rejection of Claims 1, 2, 10, 15, 16, 24, 29 and 41-43 under 35 U.S.C. §103 is respectfully requested.

The tertiary citations also fail to compensate for the deficiencies in the proposed combination of Citta and Krasner. In this regard, Beauvais was cited for its teaching of using a correlation curve to determine a fractional sample delay, Knutson was relied upon for teaching a fractional sample delay in a specified range, Nishida was relied upon for teaching a VDL receiver, and Broekhoven was used for its teaching of a computer readable medium.

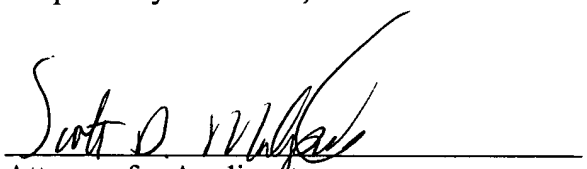
Nonetheless, without conceding the propriety of combining the art in the various combinations as proposed in the Office Action, such combinations still fail to teach or suggest Applicant's claimed invention. Therefore, reconsideration and withdrawal of the remaining rejections under 35 U.S.C. §103 are respectfully requested.

Accordingly, it is submitted that Applicant's invention as set forth in independent Claims 1, 15, 31, 41 and 42 is patentable over the cited art. In addition, dependent Claims 2-14, 16-30, 32-40, 43 and 44 set forth additional features of Applicant's invention. Independent consideration of the dependent claims is respectfully requested.

In view of the foregoing, reconsideration and allowance of this application is deemed to be in order and such action is respectfully requested.

Applicant's undersigned attorney may be reached in our Washington, D.C. office by telephone at (202) 530-1010. All correspondence should continue to be directed to Honeywell's address given below.

Respectfully submitted,



Attorney for Applicant
Scott D. Malpede
Registration No. 32,533

HONEYWELL INTERNATIONAL INC.
Law Department
101 Columbia Road
P.O. Box 2245
Morristown, New Jersey 07962-2245

SDM\nm

DC_MAIN 207822v1